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PATENT & TRADEMARK OFFICE

Practitioner's Docket No. 313-012.1 **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Francis J. Maguire, Jr.
Application No.: 10/057,489 Group No.: 2851
Filed: January 23, 2002 Examiner: Magda Cruz
For: Method and Devices for Displaying Images for Viewing with Varying Accommodation

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Commissioner for Patents
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Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF (PATENT APPLICATION—37 C.F.R. § 1.192)

NOTE: The phrase "the date on which" an "appeal was taken" in 35 U.S.C. 154(b)(1)(A)(ii) (which provides an adjustment of patent term if there is a delay on the part of the Office to respond within 4 months after an "appeal was taken") means the date on which an appeal brief under § 1.192 (and not a notice of appeal) was filed. Compliance with § 1.192 requires that: 1. the appeal brief fee (§ 1.17(c)) be paid (§ 1.192(a)); and 2.the appeal brief complies with § 1.192(c)(1) through (c)(9). See Notice of September 18, 2000, 65 Fed. Reg. 56366, 56385-56387 (Comment 38).

1. Transmitted herewith, in triplicate, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on May 11, 2004.

NOTE: "Appellant must, within two months from the date of the notice of appeal under § 1.191 or within the time allowed for reply to the action from which the appeal was taken, if such time is later, file a brief in triplicate. . . " 37 C.F.R. § 1.192(a) (emphasis added).

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Deborah J. Clark
Signature

Date: July 13, 2004

Deborah J. Clark
(type or print name of person certifying)

** Only the date of filing (§ 1.6) will be the date used in a patent term adjustment calculation, although the date on any certificate of mailing or transmission under § 1.8 continues to be taken into account in determining timeliness. See § 1.703(f). Consider "Express Mail Post Office to Addressee" (§ 1.10) or facsimile transmission (§ 1.6(d)) for the reply to be accorded the earliest possible filing date for patent term adjustment calculations.*

2. STATUS OF APPLICANT

This application is on behalf of

☐ other than a small entity.

☒ a small entity.

A statement:

☐ is attached.

☐ was already filed.

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. § 1.17(c), the fee for filing the Appeal Brief is:

☒ small entity	$165.00
☐ other than a small entity	$330.00

Appeal Brief fee due $ 165.00

4. EXTENSION OF TERM

NOTE: 37 C.F.R. § 1.704(b) ". . .an applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument, or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant, in which case the period of adjustment set forth in § 1.703 shall be reduced by the number of days, if any, beginning on the day after the date that is three months after the date of mailing or transmission of the Office communication notifying the applicant of the rejection, objection, argument, or other request and ending on the date the reply was filed. The period, or shortened statutory period, for reply that is set in the Office action or notice has no effect on the three-month period set forth in this paragraph."

NOTE: The time periods set forth in 37 C.F.R. § 1.192(a) are subject to the provision of § 1.136 for patent applications. 37 C.F.R. § 1.191(d). See also Notice of November 5, 1985 (1060 O.G. 27).

NOTE: As the two-month period set in § 1.192(a) for filing an appeal brief is not subject to the six-month maximum period specified in 35 U.S.C. § 133, the period for filing an appeal brief may be extended up to seven months. 62 Fed. Reg. 53,131, at 53,156; 1203 O.G. 63, at 84 (Oct. 10, 1997).

The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136 apply.

(complete (a) or (b), as applicable)

(a) ☐ Applicant petitions for an extension of time under 37 C.F.R. § 1.136 (fees: 37 C.F.R. § 1.17(a)(1)-(5)) for the total number of months checked below:

Extension (months)	Fee for other than small entity	Fee for small entity
☐ one month	$ 110.00	$ 55.00
☐ two months	$ 420.00	$ 210.00
☐ three months	$ 950.00	$ 475.00
☐ four months	$ 1,480.00	$ 740.00
☐ five months	$ 2,010.00	$ 1,005.00

Fee: $_________

If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

☐ An extension for ______ months has already been secured, and the fee paid therefor of $______________ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request $______________

or

(b) ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. TOTAL FEE DUE

The total fee due is:

Appeal brief fee $ 165.00

Extension fee (if any) $______________

TOTAL FEE DUE $ 165.00

6. FEE PAYMENT

☒ Attached is a ☒ check ☐ money order in the amount of $ 165.00

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☐ to Credit card as shown on the attached credit card information authorization form PTO-2038.

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☒ Charge any additional fees required by this paper or credit any overpayment in the manner authorized above.

A duplicate of this paper is attached.

7. FEE DEFICIENCY

NOTE: If there is a fee deficiency and there is no authorization to charge an account, additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in returning the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to change the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, *1065 O.G. 31-33.*

☐ If any additional extension and/or fee is required,

AND/OR

☐ If any additional fee for claims is required, charge:

☐ Deposit Account No. ______________

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Francis J. Maguire

SIGNATURE OF PRACTITIONER

Date: July 13, 2004

Francis J. Maguire

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: Francis J. Maguire, Jr.	Docket No.: 313-012-1
Serial No.: 10/057,489	Group Art Unit: 2851
Filed: January 23, 2002	Examiner: Magda Cruz

For: METHOD AND DEVICES FOR DISPLAYING IMAGES FOR VIEWING WITH VARYING ACCOMMODATION

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APPEAL BRIEF

Submitted by:

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Deborah J Clark
Deobrah J. Clark

July 13, 2004
Date

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TABLE OF CONTENTS

TABLE OF AUTHORITIES

Dear Sir:

The following is Appellant's Appeal Brief submitted in triplicate pursuant to the Notice of Appeal filed May 11, 2004:

I. Real Party in Interest

Francis J. Maguire, Jr.

II. Related Appeals and Interferences

None.

III. Status of Claims

Claims 1 - 3 are pending, claim 2 is allowed, and claims 1 and 3 are rejected for lack of novelty and are on appeal.

IV. Status of Amendments

There were no amendments filed subsequent to the final action.

V. Summary of the Invention

Moving picture images, e.g., video images have recently been provided for viewing at varying apparent distances with correspondingly varying accommodation (focus) in the eyes of the viewer. Applicant has shown this for instance in U.S. Patent 5,644,324. With increased magnification merely at the viewer's end, the prior art has not provided any increased level of image granularity available for inspection. If the magnification is also increased at the camera end there will be increased granularity but the viewer with increased accommodation will focus on only a small part of the entire field-of-view presented. The effect is the same, i.e., no

increase in granularity. Therefore, the verisimilitude of the video imagery under increased magnification is deteriorated and presents a problem for viewing videos with varying accommodation.

According to the invention, as expressed in independent method claim 1 and with reference to Fig. 1, in response to an image information signal, light (22) projected from an image projector (20) is controllably refracted (24) in response to a first control signal (26) for projecting refracted light (27) for providing viewable images of varying extent, and controllably refracting (60) the viewable images in response to a second control signal (64) for viewing images (65) of increasingly smaller extent with correspondingly increasing magnification.

Likewise, as expressed in independent device claim 3 also with reference to Fig. 1, an image projector (20) is for projecting light (22) in response to an image information signal (18). A first optic (24) is for controllably refracting the projected light in response to a first control signal (26) for providing light rays (27) of varying extent. A second optic (60) is for controllably refracting the light rays of varying extent in response to a second control signal (64) for providing light rays (65) of increasingly smaller extent at correspondingly decreasing focal length.

VI. Issues

Whether claims 1 and 3 are anticipated by Waldern et al (U.S. Patent No. 6,407,724) under 35 U.S.C. §102(e).

VII. Grouping of Claims

Claims 1 and 3 stand or fall together.

VIII. Argument

This Appeal Brief is in response to the Final Office Action mailed February 11, 2004 in which claims 1and 3 were finally rejected as being anticipated by U.S. Patent No. 6,407,724 (Waldern et al.) under 35 U.S.C. § 102(e).

An introductory remark about the Waldern et al disclosure is appropriate. It will be recalled from the above summary that the present invention relates to a particular problem in displaying images for viewing with varying accommodation. As will be discussed below, Waldern et al discuss accommodation of the eye in three places and only in passing. First, in column 3, lines 14-16 it is stated that the full range of accommodation and convergence required to simulate human vision is provided because the parameters governing the factors can be altered dynamically. Second, at column 9, lines 14-20, it is stated that the focal length of the device can be used to remove conflicts between accommodation and convergence. Third, it is stated at col. 18, line 66- through col.19, line 8 that the software for driving the dynamic lens can be suitably designed to prevent dissociation between accommodation and convergence. But none of this pertains to the problem addressed by the present invention

As shown above, the Waldern disclosure only mentions accommodation in passing (see the passages mentioned above) and actually has more to do with other problems.

For instance, the dynamic lenses are used to sequentially direct light of different colors to an observer's eye (col. 1, lines 60-63; col. 3, lines 2-5) to correct a chromatic aberration problem (col. 1, lines 34-36; col. 18, lines 27-36). Diffractive optics are shown used to simulate the effect of a lens in striving for a wide field-of-view and both light weight and reduced size in head-mounted displays (see col. 1, lines 13-45) without the chromatic aberration. See also the first paragraph of the abstract of Waldern et al. See the red, green, and blue triads 25 in Figs. 9 & 10 (col. 11, lines 60-1), 250 in Fig. 12 (col. 15, lines 19-21), and 1101 in Fig. 22 (col. 20, line 35).

Another concern of Waldern et al is to provide a small area of high resolution in images for viewing by the eye of the viewer as it moves. The eye movements are monitored and the area

of high resolution moves with the eye. Outside the small area where the eye is directed, the imagery is provided with low resolution. See the second paragraph of the abstract of Waldern et al. and the text at column 3, lines 22-31 (method) and column 3, lines 32-41 (apparatus) as well as the text at column 8, lines 37-53 describing Fig. 3 and the text at column 18, line 66 through column 19, line 8. See also the reasoning at column 9, lines 21-32 where the idea is to minimize the amount of imagery that needs to be computed for display on the screen 10 at any instant and improving the image quality by allowing the dynamic lens to operate at low field angles. However, simply allowing the dynamic lens to operate at low field angles does not improve image quality in the sense of increasing granularity, as is the case according to the present invention. What Waldern et al are referring to is being enabled by a low field angle to reduce the effects of geometric distortion (see column 10, lines 6-19).

Regarding the object of Waldern et al mentioned above, i.e., to disclose a device that provides a full range of accommodation and convergence required to simulate human vision (column 3, lines 14-16; col. 9, lines 14-20; and column 18, line 66- col. 19, line 8), there is no actual disclosure in Waldern of how to do such a thing. The present invention has to do with a problem which occurs when actually carrying out such a device, i.e., the problem described above and in the Background of Invention section of the present specification at pages 1 and 2. The problem is that even if the number of diffractive functions that can be carried out by the ESHC of Waldern et al are practically unlimited (column 13, lines 53-54), Waldern et al do no disclose controlling the resolution during changes in focal length of the dynamic lens or how to control the number of pixels available during accommodation of the eyeball. Therein lays the problem addressed by the present invention. When a display is magnified so as to inspect its imagery more closely, if nothing is done, the granularity of the original display becomes more apparent because the extent being viewed is smaller. In other words, unlike the real world, where increased focus always reveals deeper granularity, the underlying granularity of the display is fixed. Waldern et al suggest (for reasons other than solving the problem addressed by the present invention) that the display screen 10 should have a suitably high pixel resolution (column 12, lines 8-12), but that does not solve the problem mentioned in the Background of the

Invention section of the present application. As far as can be seen from a reading of Waldern et al, the granularity problem of the display screen 10 (Figs. 3, 4, 4A, 8, 8A, 9 10, 11, 16-19) or panel 280 (Fig. 14), or light emitting elements 250 (Fig. 12), or display panel 290 (Fig. 15), etc., of Waldern et al under increased magnification during accommodation of the eyeball is not addressed.

Thus, Waldern et al do not actually deal with the problem described in the present application, nor do Waldern et al describe any solution thereto, not to mention the solution claimed in claims 1 and 3. Waldern et al simply do not show a first controllably refractive optic for providing refracted light from a projector as viewable images (claim 1) or light rays (claim 3) of varying extent such as shown in Figs. 3-5 of the present disclosure. Nor do Waldern et al show or describe a second optic for controllably refracting the viewable images or light rays from the first optic in response to a second control signal for viewing images (claim 1) of increasingly smaller extent with correspondingly increasing magnification or for providing light rays (claim 3) of increasingly smaller extent at correspondingly decreasing focal length.

* * *

Regarding the rejection and the first step of method claim 1, the Examiner points to light projected from an image projector, pointing to column 15, line 61-64. This passage refers back to the preceding description of Fig. 12 (beginning at column 15, line 12) and states that an LCD or electro luminescent panel is another way of doing that which is shown in Fig. 12. It is not clear from Waldern et al what is meant by this statement but it appears that the light elements 250 (lasers or LEDs) 250 are possibly replaced by an LCD or electro luminescent panel, leaving gaps in the "display layer". What is meant by the display layer is not clear. In any event, if either the light emitting elements 250 of Fig. 12 or an LCD or electro luminescent panel were used, such would constitute projecting light from an image projector, although no image information signal is shown (as claimed in claim 1).

Regarding the second step of claim 1, it states that the projected light is controllably refracted in response to a first control signal for projecting refracted light for providing viewable

images of varying extent.

The EHSC (Electrically Switchable Holographic Composite) 251 of Fig. 12 of Waldern comprises a number of layers, each of which contains a plurality of pre-recorded holographic elements which function as diffraction gratings (or as any other chosen type of optical element). See column 12, lines 39-52 of Waldern et al. The holographic elements can be selectively switched into and out of operation by means of respective electrodes (not shown by Waldern et al), and sequences of these elements can be used to create multiple diffraction effects.

This would constitute controllably refracting the projected light as claimed in the second step of claim 1, but Waldern et al do not show anything about providing viewable images of varying extent such as illustrated in Figs. 3-5 of the present disclosure.

Regarding the third step of claim 1, it claims controllably refracting the viewable images in response to a second control signal for viewing the images of increasingly smaller extent with correspondingly increasing magnification. This last step is also not shown by Waldern et al. Waldern et al merely states that the ESHCs 251 can be used to create multiple diffraction effects. The purpose of providing the viewable images of varying extent in the second step is so as to correspond to the controllable refraction thereof in the third step.

The Examiner also points to column 16, lines 12-15 for the claimed first control signal. The passage at column 16, lines 12-15 refers to Fig. 15 which is different from Fig. 12. It is not seen how the claim is to be "read on" the disclosure of Fig. 12 when the Examiner shifts gears to another, unrelated Figure. The cited passage describes the lenses in the panel 292 which is a passive panel of lenses (not controllable) that forms images of the surroundings on the detectors in the detector array 291. Signals received from the detectors are processed by a processor 293 for display on the display panel 290.

Although there is a dynamic lens 293 apparently shown by Fig. 15, it does not include the steps claimed in claim 1 where two distinct steps of refraction are done for providing viewable images of varying extent in response to two distinct control signals for viewing images of increasingly smaller extent with correspondingly increasing magnification.

Waldern et al does not disclose anything of this kind. In order for a §102(e) rejection to

stand, the reference must teach every element of the claim, MPEP 2131 (see citations). As discussed above, Waldern et al fail to teach every step of claim 1.

Overturning of the 35 U.S.C. §102(e) rejection of claim 1 is requested.

* * *

Regarding the 35 U.S.C. § 102(e) rejection of the device of claim 3, the alleged first optic 292 of Waldern et al is not capable of being controllably refractive because it a totally passive panel of lenses which is not responsive to any control signal and therefore does not provide light rays of varying extent. Only the dynamic lens 293 of Fig. 15 is controllably refractive. The passage at column 14, lines 28-33 refers to a dynamic lens such as the dynamic lens 293 of Fig. 15, not to the passive panel of lenses 292.

The alleged second optic 293 of Fig. 15 of Waldern is responsive to light from a display panel 290, not from the panel of lenses 292. Therefore, the dynamic lens 293 of Fig. 15 of Waldern does not controllably refract light from the panel of lenses 292, but from a display panel 290. Even if the light refracted by the panel of lenses 292 were from a projector (which is not admitted) to be provided directly to the dynamic lens 293 (removing the detector array 291 and the display panel 290), there would still not be two distinct optics as claimed in claim 3, a first that is controllably refracted to provide light rays of varying extent and a second optic that controllably refracts the light rays of varying extent to provide light rays of increasingly smaller extent at correspondingly decreasing focal length. Waldern et al do not even hint at these limitations. In order for a §102(e) rejection to stand, the reference must teach every element of the claim, MPEP 2131 (see citations). As discussed above, Waldern et al fail to teach every element of claim 3.

Overturning of the 35 U.S.C. §102(e) rejection of claim 3 is requested.

The rejection of claims 1 and 3 in the final office action of February 11, 2004, having been shown to be inapplicable, overturning thereof is requested and passage of claims 1 to 3 to issue is solicited.

Respectfully submitted,

Francis J. Maguire

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/djc
July 13, 2004

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THE CLAIMS

1. Method, comprising the steps of:

projecting light (22) from an image projector (20), in response to an image information signal (18),

controllably refracting said projected light, in response to a first control signal (26), for projecting refracted light (27) for providing viewable images of varying extent, and

controllably refracting said viewable images in response to a second control signal (64) for viewing said images of increasingly smaller extent with correspondingly increasing magnification.

2. Device, comprising:

a projector (20), responsive to an image information signal (18), for providing first light rays (22);

a first optic (24), responsive to the first light rays and to a first control signal, for providing second light rays (27);

a screen (28), responsive to the second light rays (27), for providing third light rays (29) indicative of images of varying size; and

a second optic (60), responsive to the third light rays and to a second control signal, for providing fourth light rays (64) for viewing.

3. Device, comprising:

an image projector (20) for projecting light (22) in response to an image information signal (18),

a first optic (24) for controllably refracting said projected light, in response to a first control signal (26), for providing light rays (27) of varying extent, and

a second optic (60) for controllably refracting said light rays (65) of increasingly smaller extent at correspondingly decreasing focal length.